09/121798
Att #12

1. Document ID: US 5981735 A

L5: Entry 1 of 6

File: USPT

Nov 9, 1999

US-PAT-NO: 5981735
DOCUMENT-IDENTIFIER: US 5981735 A
TITLE: Method of plasmid DNA production and purification
DATE-ISSUED: November 9, 1999

US-CL-CURRENT: 536/25.4; 424/124, 435/384, 435/404, 530/417, 536/26.42, 536/26.43, 71/8

APPL-NO: 8/ 798825
DATE FILED: February 12, 1997

PARENT-CASE:
This application is a continuation of U.S. provisional application Ser. No. 60/012,736, filed
Mar. 4, 1996, and now abandoned.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
GB	9602825	February 12, 1996

IN: Thatcher; David R., Hitchcock; Anthony, Hanak; Julian A.J., Varley; Diane L.

AB: A scalable method for the production of highly purified plasmid DNA in
Escherichia coli is described, which method includes growing plasmid-containing cells to a
high biomass in exponential growth and lysing the cells by raising the pH of the culture to
a carefully controlled pH value in which chromosomal DNA is denatured but plasmid DNA is
reversibly renatured. The method has been developed for the production of pharmaceutical
grade DNA for use in in vivo and ex vivo gene therapy.

2. Document ID: US 5955323 A

L5: Entry 2 of 6

File: USPT

Sep 21, 1999

US-PAT-NO: 5955323
DOCUMENT-IDENTIFIER: US 5955323 A
TITLE: Automated high-yield fermentation of plasmid DNA in Escherichia coli
DATE-ISSUED: September 21, 1999

US-CL-CURRENT: 435/91.1; 435/252.8, 435/259, 435/89

APPL-NO: 8/ 691177
DATE FILED: August 1, 1996

IN: Chen; Wei

AB: This invention relates to a fermentation process for high-yield production of
plasmid DNA in E coli strains. In the disclosed process, a slow growth rate of cells is
controlled and maintained by an automated nutrient feed scheme based on dissolved oxygen
concentration (DOC) and pH. This controlled slow growth rate promotes high plasmid DNA
stability during host cell replication. As a result, high yield production of plasmid DNA is
achieved.

3. Document ID: US 5561064 A

L5: Entry 3 of 6

File: USPT

Oct 1, 1996

US-PAT-NO: 5561064
DOCUMENT-IDENTIFIER: US 5561064 A
TITLE: Production of pharmaceutical-grade plasmid DNA
DATE-ISSUED: October 1, 1996

US-CL-CURRENT: 435/320.1; 435/259, 435/91.1

APPL-NO: 8/ 192151
DATE FILED: February 1, 1994

IN: Marquet; Magda, Horn; Nancy, Meek; Jennifer, Budahazi; Gregg

AB: The invention relates to a method for producing plasmid DNA, comprising the steps
of: (a) lysing cells containing the plasmid DNA to obtain a lysate; (b) treating the lysate
by a means for removing insoluble material to obtain a solute; and (c) applying the solute
to differential PEG precipitations and chromatography to purify the plasmid DNA. In other
embodiments of the invention, the plasmid DNA is produced with GRAS reagents; the plasmid
DNA is produced in the absence of enzymes; the plasmid DNA is produced in the absence of
organic extractants; the plasmid DNA is produced in the absence of mutagens; the lysing,
treating and applying steps are scalable to result in the large scale manufacture of the
plasmid DNA; and the lysing, treating and applying steps result in the generation of
pharmaceutical grade material.

4. Document ID: WO 9636706 A1

L5: Entry 4 of 6

File: EPAB

Nov 21, 1996

PUB-NO: WO009636706A1
DOCUMENT-IDENTIFIER: WO 9636706 A1
TITLE: A METHOD FOR LARGE SCALE PLASMID PURIFICATION

PUBN-DATE: November 21, 1996

INT-CL (IPC): C12N 15/10; C12P 19/34
EUR-CL (EPC): C12N015/10; C12P019/34, C12N015/10

APPL-NO: US09607083
APPL-DATE: May 15, 1996
PRIORITY-DATA: US44611895A (May 19, 1995)

IN: LEE, ANN L, SAGAR, SANGEETHA

AB: A process is disclosed for the large scale isolation and purification of plasmid
DNA from large scale microbial fermentations. All three forms of plasmid DNA; supercoil
(form I), nicked or relaxed circle (form II), and linearized (form III), are individually
isolatable using the disclosed process. Highly purified DNA suitable for inclusion in a
pharmaceutical composition is provided by the disclosed process.

5. Document ID: US 5561064 A

L5: Entry 5 of 6 File: EPAB Oct 1, 1996

PUB-NO: US005561064A
DOCUMENT-IDENTIFIER: US 5561064 A
TITLE: Production of pharmaceutical-grade plasmid DNA

PUBN-DATE: October 1, 1996

INT-CL (IPC): C12N 15/00
EUR-CL (EPC): C07K014/705; C12N015/10

APPL-NO: US19215194
APPL-DATE: February 1, 1994
PRIORITY-DATA: US19215194A (February 1, 1994)

IN: MARQUET, MAGDA, HORN, NANCY, MEEK, JENNIFER, BUDAHAZI, GREGG

AB: The invention relates to a method for producing plasmid DNA, comprising the steps
of: (a) lysing cells containing the plasmid DNA to obtain a lysate; (b) treating the lysate
by a means for removing insoluble material to obtain a solute; and (c) applying the solute
to differential PEG precipitations and chromatography to purify the plasmid DNA. In other
embodiments of the invention, the plasmid DNA is produced with GRAS reagents; the plasmid
DNA is produced in the absence of enzymes; the plasmid DNA is produced in the absence of
organic extractants; the plasmid DNA is produced in the absence of mutagens; the lysing,
treating and applying steps are scalable to result in the large scale manufacture of the
plasmid DNA; and the lysing, treating and applying steps result in the generation of
pharmaceutical grade material.

6. Document ID: WO 9602658 A1

L5: Entry 6 of 6 File: EPAB Feb 1, 1996

PUB-NO: WO009602658A1
DOCUMENT-IDENTIFIER: WO 9602658 A1
TITLE: A METHOD FOR LARGE SCALE PLASMID PURIFICATION

PUBN-DATE: February 1, 1996

INT-CL (IPC): C12P 19/34; C12N 15/11; C07H 21/00; C07H 21/02
EUR-CL (EPC): C12P019/34; C12N001/06, C12N015/10

APPL-NO: US09508749
APPL-DATE: July 11, 1995
PRIORITY-DATA: US27557194A (July 15, 1994)

IN: LEE, ANN L, SAGAR, SANGEETHA

AB: A process is disclosed for the large scale isolation and purification of plasmid
DNA from large scale microbial fermentations. All three forms of plasmid DNA; supercoil
(form I), nicked or relaxed circle (form II), and linearized (form III), are individually
isolatable using the disclosed process. Highly purified DNA suitable for inclusion in a
pharmaceutical composition is provided by the disclosed process.